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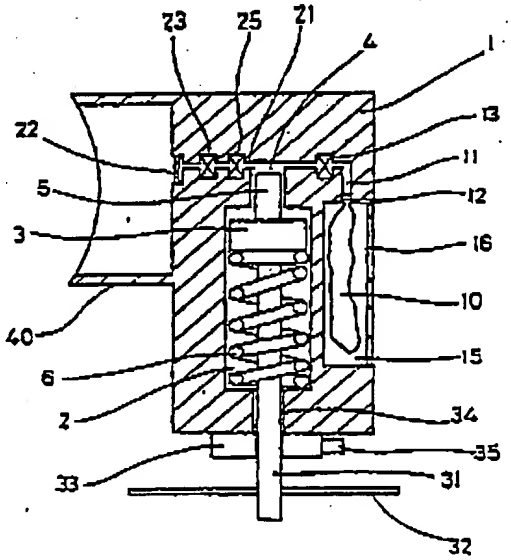
(54) **Inhalálókészülék és eljárás porlasztására**

KIVONAT

A találmány tárgya inhalálókészülék adagolt folyadékmennyiség nyomás alatti porlasztására, főleg tüdőbe juttatandó permetcseppek porlasztására egy hordozható porlasztókészülékkel, amely egy porlasztófejet, az adagolt folyadékmennyiséget befogadó nyomókamrát, és az adagolt folyadékmennyiséget a nyomókamrába juttató valamint a folyadékmennyiségnek a nyomókamrából valókibocsátására szolgáló eszközöket, továbbá a nyomókamrához hozzárendelt energiatárolót foglal magában, oly módon kialakítva, hogy a nyomókamra (4) nyomása az energiatároló útján szakaszosan változtatható és a nyomókamrához (4) egy nyomásfokozó van hozzárendelve, ahol a nyomásfokozón ütközőtető elemmel (35) és reteszelő elemmel (33) van ellátva, és az adagoland ófolyadékmennyiség folyadéktárolója (10) és a nyomókamra (4) között a folyadékmennyiséget kivezető adagoló egysége van, valamint a nyomókamrában (4) túlnyomás alatt lévő és az onnan adagolt folyadékmennyiséget kijuttató és azt szétporlasztó porlasztófejjel (22) rendelkezik. A találmányhoz tartozik egy eljárás is adagolt folyadékmennyiség porlasztására hordozható inhalálókészülékkel, főleg tüdőbe történő inhalálásra, ahol egy gyógyhatású folyadékot egy porlasztófejen át permetködd é porlasztanak, és a porlasztófejet a szájnyílás feléirányítják, és ahol a gyógyhatású folyadékot egy előre megha-



1. ábra

A leírás terjedelme 20 oldal (ezen belül 7 lap ábra)

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008806368 **Image available**
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Spray atomising device - has non-return valves and pressure chamber to which metered quantities of drug are successively presented

Patent Assignee: DMW TECHNOLOGY LTD (DMWT-N); DUNNE MILLER WESTON LTD (DUNN-N); BOEHRINGER INGELHEIM INT GMBH (BOEH); BOEHRINGER INGELHEIM KG (BOEH); DUNNE MILLER WESTON (DUNN-N)

Inventor: DUNNE S T; KING A W; WESTON T E; DUNNE S; WESTON T

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Patent Family:

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			FI 924216	A	19920921	
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			GB 9215398	A	19920720	
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CN 1061362	A	19920527	CN 91102794	A	19910321	199306
NO 9203647	A	19921109	WO 91GB433	A	19910321	199306
			NO 923647	A	19920918	

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BR 9106249	A	19931109	BR 916249	A	19910321	199349
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			HU 922985	A	19910321	
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			EP 94112017	A	19910321	
IE 62626	B	19950222	IE 91929	A	19910320	199519
IL 97619	A	19950526	IL 97619	A	19910320	199536
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US 5497944	A	19960312	WO 91GB433	A	19910321	199616
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CA 2078683	C	19971007	CA 2078683	A	19910321	199801
EP 521061	B1	19971210	EP 91906552	A	19910321	199803
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NO 303206	B1	19980615	WO 91GB433	A	19910321	199830
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ES 2141786	T3	20000401	EP 94112017	A	19910321	200023

Priority Applications (No Type Date): GB 9023767 A 19901101; GB 906340 A 19900321

Cited Patents: 01Jnl.Ref; EP 111875; GB 1239855; GB 2209564; SU 992070; No-SR.Pub; EP 86144; WO 9116993

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WO 9114468	A				
Designated States (National): AT AU BB BG CA CH DE DK ES FI GB HU JP KP KR LK LU MC MG MW NL NO PL RO SD SE SU US					
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FI 104311	B1			A61M-011/00	Previous Publ. patent FI 9204216
EP 627230	B1	E		B05B-011/00	Div ex application EP 91906552
					Div ex patent EP 521061

Designated States (Regional): AT BE CH DE DK ES FR GB GR IT LI LU NL SE

DE 69131966	E		B05B-011/00	Based on patent EP 627230
ES 2141786	T3		B05B-011/00	Based on patent EP 627230
GB 2256805	A	45	A61M-011/00	Based on patent WO 9114468
EP 521061	A1 E	45	A61M-011/00	Based on patent WO 9114468

Designated States (Regional): AT BE CH DE DK ES FR GB GR IT LI LU NL SE

BR 9106249	A		A61M-011/00	Based on patent WO 9114468
JP 5509241	W		A61M-011/00	Based on patent WO 9114468
GB 2256805	B		A61M-011/00	Based on patent WO 9114468
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HU 66175	T		A61M-011/00	Based on patent WO 9114468
EP 627230	A2 E	20	A61M-015/00	Related to application EP 91906552

Designated States (Regional): AT BE CH DE DK ES FR GB GR IT LI LU NL SE

EP 627230	A3			Related to patent EP 521061
US 5497944	A	21	A61M-011/00	Based on patent WO 9114468
US 5662271	A	19	A61M-011/00	Cont of application WO 91GB433 Cont of application US 92938174 Cont of patent US 5497944
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ES 2109943	T3	A61M-011/00	Based on patent EP 521061
CZ 283820	B6	B05B-011/00	Previous Publ. patent CS 9100750
NO 303206	B1	A61M-011/00	Previous Publ. patent NO 9203647
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SK 280225	B6	A61M-011/00	Previous Publ. patent CS 9100750
KR 139652	B1	A61M-011/00	
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CN 1061362	A	B05B-011/02	
NO 9203647	A	A61M-000/00	
PT 97098	A	A61M-015/00	
NZ 237502	A	A61M-011/00	
IE 62626	B	B05B-011/00	
IL 97619	A	B05B-011/00	
TW 253846	A	B05B-015/00	
CA 2078683	C	A61M-011/00	
SG 45171	A1	A61M-011/00	
RU 2104048	C1	A61M-011/00	

Abstract (Basic): WO 9114468 A

The device comprises a piston (3) which is mounted in a cavity (2) within a body (1), and is urged by a pre-loaded spring (6) into a reduced cross-section pressure chamber (4). The piston (3) may be loaded by means of an actuating rod (31) having a handle (32), and may be latched in a loaded position by a latch (33). A liquid drug (e.g. in aqueous solution) is contained in a collapsible bag(10).

Metered quantities of the drug are successively presented in the pressure chamber (4), and then subjected to a sudden and great increase in pressure, to eject the liquid drug through an atomising head (22), to reduce it to a fine atomised spray of small mean particle size- for example, less than 30 micrometres . Non-return valves 23) and 25)control the flow of liquid through the device.

USE/ADAVNTAGE - A metered dose inhaler. The sudden pressure pulse is caused by releasing the spring loaded piston (3), upon depressing an actuating button (35) connected to the latch (33).(45pp Dwg.No.---1/8)

Abstract (Equivalent): EP 521061 B

The device comprises a piston (3) which is mounted in a cavity (2) within a body (1), and is urged by a pre-loaded spring (6) into a

reduced cross-section pressure chamber (4). The piston (3) may be loaded by means of an actuating rod (31) having a handle (32), and may be latched in a loaded position by a latch (33). A liquid drug (e.g. in aqueous solution) is contained in a collapsible bag(10).

Metered quantities of the drug are successively presented in the pressure chamber (4), and then subjected to a sudden and great increase in pressure, to eject the liquid drug through an atomising head (22), to reduce it to a fine atomised spray of small mean particle size- for example, less than 30 micrometres . Non-return valves 23) and 25)control the flow of liquid through the device.

USE/ADAVNTAGE - A metered dose inhaler. The sudden pressure pulse is caused by releasing the spring loaded piston (3), upon depressing an actuating button (35) connected to the latch (33).(45pp Dwg.No.---1/8)

Dwg.1/8

Abstract (Equivalent): GB 2256805 B

A device for dispensing a metered amount of a fluid as a spray of droplets by discharging the metered amount of the fluid under pressure through an atomising means, characterised in that the apparatus comprises: a chamber for containing a metered quantity of a fluid at a first lower pressure; an energy storage means for retaining and applying a predetermined amount of energy to the chamber so as to subject the metered quantity of fluid to a pre-determined increase in pressure from said first lower pressure to a second higher pressure of 50 bar or more so as to discharge said metered amount of fluid from said chamber; and atomising means for atomising the fluid from said chamber comprising an outlet aperture having an hydraulic diameter of 100 micrometres or less.

Dwg.1/1

Abstract (Equivalent): US 5662271 A

A device for dispensing fluid as a spray of droplets, comprising:

a chamber for containing fluid at a first pressure;

a piston for pressurizing and discharging the fluid in said chamber, wherein said piston is reciprocable between a loaded position and a discharge position;

resilient biasing means for urging said piston from the loaded position to the discharge position thereby subjecting the fluid in said chamber to a predetermined increase in pressure from said first pressure to a second pressure of at least 50 bar to permit discharge of the fluid from said chamber at said second pressure, wherein said resilient biasing means is in a loaded state when said piston is in the loaded position;

latching means for holding said resilient biasing means in the loaded state;

actuating means for releasing said latching means, wherein release of said latching means releases said resilient biasing means from the loaded state and said resilient biasing means urges said piston from the loaded position to the discharge position thereby initiating discharge of the fluid from said chamber at said second pressure; and

atomising means for atomising the fluid discharged from said chamber.

Dwg.3/8

US 5497944 A

A device for dispensing a metered quantity of fluid as a spray of droplets by discharging the metered quantity of fluid under pressure through an atomising means, comprising:

a chamber for containing said metered quantity of fluid at a first pressure;

an energy storage means for retaining and applying a predetermined amount of energy to said chamber so as to subject said metered quantity of fluid to a predetermined increase in pressure from said first pressure to a second pressure of at least 50 bar to permit discharge of said metered quantity of fluid from said chamber at said second pressure; and

atomising means for atomising said fluid discharged from said

chamber, said atomising means comprising an outlet aperture having a hydraulic diameter of 100 micrometers or less, whereby said fluid is atomized into droplets having a mean size suitable for inhalation into the lungs.

Dwg.3/8